

=====

Sequence Listing was accepted.

If you need help call the Patent Electronic Business Center at (866) 217-9197 (toll free).

Reviewer: markspencer

Timestamp: [year=2008; month=12; day=9; hr=12; min=40; sec=35; ms=396; ]

=====

Application No: 10591224 Version No: 1.0

**Input Set:**

**Output Set:**

**Started:** 2008-11-21 16:29:26.749  
**Finished:** 2008-11-21 16:29:27.078  
**Elapsed:** 0 hr(s) 0 min(s) 0 sec(s) 329 ms  
**Total Warnings:** 0  
**Total Errors:** 0  
**No. of SeqIDs Defined:** 2  
**Actual SeqID Count:** 2

SEQUENCE LISTING

<110> RUSSELL, James A.  
WALLEY, Keith R.

<120> TOLL-LIKE RECEPTOR 2 (TLR-2) HAPLOTYPES PREDICT OUTCOME OF PATIENTS

<130> RUSSELL-4

<140> 10591224

<141> 2008-11-21

<150> PCT/CA2005/000357

<151> 2005-03-04

<150> US 60/549,560

<151> 2004-03-04

<160> 2

<170> PatentIn version 3.3

<210> 1

<211> 401

<212> DNA

<213> Homo sapiens

<400> 1

ccccaaattt aaaagagggc aagaaaagag agacaataga acataaaaca aatgggacaa 60

gaataaaagta catagttgtc acagtccctt gggtgctgct gtaacaaaat acctgagact 120

gggttaattt caaagaacag aaatttatcc attcatggtt ctggagtctg ggaagtccaa 180

gattgaaggg ctgcatactgg wgggggtcat ctggctacat tataacatga tggaaagcat 240

cacatggtga gagagagcaa gagaggacag aacttacttt tataacaaac tcattctcac 300

aataaaactgc tcccttggtg ataacattaa tccatttatg agggtagacgc cttcataaacc 360

taatcacctc ttaaaaaggtt ccacctctca gctcgcaagt a 401

<210> 2

<211> 33164

<212> DNA

<213> Homo sapiens

<220>

<221> Unsure

<222> (12165)..(12165)

<223> n is a, c, g, or t

<220>

<221> Unsure

<222> (12207)..(12306)

<223> n is a, c, g, or t

<220>

<221> Unsure

<222> (24073)..(24172)

<223> n is a, c, g, or t

<400> 2

tgactctgtt attaagattt ttaccaaaga gcaactgttag ctaggtggc ctgacttcaa	60
gggacagacc aaacaaacaa caaaacacaa aacaaaacaa acaaacaaca aaagcaagag	120
cagaaactat tggaaaatga ttatttcacc aatattttaa agttcttcc tggtaa	180
aaggaacatc tttaagttct ttataatgtt cccattttac atttacaaaa actgccagaa	240
gttgacagca tttttgggg gtttctaagg tatcagttaa tttttgggg tacagttta	300
ttgataaaact aacagagtag aaaaaatcta atggaatacc cccaaattta aaagaggc	360
agaaaaagaga gacaatagaa cataaaacaa atgggacaag aataaagtac atagttgtca	420
cagtcccttg ggtgctgctg taacaaaata cctgagactg ggttaatttac aaagaacaga	480
aatttatcca ttcatggttc tggagtctgg gaagtccaaat attgaaggc tgcattggw	540
gagggtcattc tggctacatt ataacatgtt ggaaagcatc acatggtgag agagagcaag	600
agaggacaga acttactttt ataacaaact cattctcaca ataaactgct cccttggtga	660
taacattaat ccatttatga gggtaacagcc ttcataacct aatcacctct taaaagggttc	720
cacctctcag ctgcgactgtga gcccggatca tgccactgca ctccagcctg ggtgacagag	780
cgagactctg tctcaaaaca aacaaacaaa caaaaattcc acctctcaac actgttgcatt	840
tgaagatgaa atttccaata catgagctt ggggcacaca ttcaaccat agcaatagtt	900
caattacttt aaagccaaa atgtcagtaa ttatattaa tgcaatttaa tacatcagta	960
actaaatgag atagactaaa ttttatgata atcagactaa tattatcaga ctagacttca	1020
aaacaaccca acaatcatat gctgtttaca agagacacat ttatggatac taaaaggat	1080
aaagtgaaca gatgcaacca ttatcaaaa gaaagctgtt gtggcaatata tactattaga	1140
caaaaatgaa ttagaaaaaa aatcataact gtagataaac gtttcaactaa gttaaaggtt	1200
tcactgagaa gaaataaaaaa tttgaattt ataagtactt ataacaacat taagaaacta	1260
gaaaatgaa aaagaataga gccaaaattt actgaactag aaaaatgaa aattcataga	1320
aaaatccaca atcatagtgg gagatttat catacatctc tcagtaactg atagaaaaac	1380
cagacaaaaaa tcaataagga taaagaaaaat gcgaaacacaa tggtagttcac ataaggaacc	1440

tatactactt ccaacagcag ctgaaatcac agagcatact taaaatctga ccatatactg 1500  
gctcatagag taaattgcaa tacatttaa agaatttaaa tcatacagaa tatgtcttct 1560  
gaccataatg caattaaagt agaaaagaac agaaaaactt atagaaaatt ctcataatatt 1620  
tggaaattag taaattcta aataacccat gggtaaaaaa ataatcagaa tgaaaatcag 1680  
aaaatattt taatgactta tgaaaaaaat tacatataaa aacttgcag atgcacctaa 1740  
actattgctt aaagggaaact tacaaccctt agtgcataata tttagaaatga agagtgcacga 1800  
aaaatgaatg agcaagcaaa tacctaaaaa actggaaaag gaatagtaaa ataaatccag 1860  
agaaatcaga acagggaaa taataatata agaatagaaa ttaatgtgct agaaaatagg 1920  
ggatctatca agtcagaagt tgatTTTG aaaatgctaa taaaaatgat gaacctctgg 1980  
caagacaata aaagctggta caaataactc atctaaggaa taaaattgag gacctcttt 2040  
ttgttaatg acataagcag gaggccatta tcctgagact gtctctacac tttgagttct 2100  
tacataataa actgcaacct aatttagtat actacataaa caaactgaaa cctaacttag 2160  
gagtctttt ttttgtaatt aatagctaa tttccaccaa atcataaata gccaagcttt 2220  
agccaatcac aggccacaa ctgatcagac tatgccaaa caaggtaaat gcctattaca 2280  
ccatacccaa ataaggcaga ctccctagctg aagccaatca ggtgattact atgctttgt 2340  
gtttggccta taaaagctca ctgctcacac ttttgatgc tctctgaaac ttttgtgaat 2400  
ctgagtgctg cctgattcat gaatcattct ttgctaaaat aaactctgtc aaatttaatt 2460  
tgtctgaagt ttctcttttta acagtgtttg gtgttgcaag caggatccaa aggagaccta 2520  
tagtgactcc caggagacct atagtgactc ccaggagctc ttagtgacca agtgaaggt 2580  
cctgtggggc tcatttgcc cattgcttt tcactgctt caactggtag ttgtggtaa 2640  
gttcctgctc agacttgagc actatacatt tgcatttca gctctctgac tttatTTGAG 2700  
caattctttt atggattggc tccagaattt gattggattc agtgaagaaa ctgaaactgg 2760  
actggtgctc taggaggcct caagtagata aggttactag aagacaggga atcctgggct 2820  
tatctggatt taaggagtct acaactccat ctgcaactcc agccgatttc atttataaga 2880  
attatggacc aagaacctgt gctttctag agaaatgtgt gagccttact aaaggtaact 2940  
tagaattaca atggactgcc gagaccagct cggtcgtgga gaccctaacc ccagcagcgc 3000  
tagaggaatc aaagacacac acacagaaaat gttagtgcag gagtggaaa tcagggact 3060  
cacagccttc agagctgaga gcccctaaca gagattacc cacatattt ctgacagcaa 3120  
gccagtgata agcattatcg ctatagatta tagattaact aaaagtattc cttacagggaa 3180

acaaaggat gggccgaaac aaaggatag gctctggcta gatgtctgca gcaggaacac 3240  
gtcctaagg cacagattgc tcatgctatt gttgtggctt aggaacacgt taagcggtt 3300  
tctgccctgg gtggccagg tttccttc cctcattcca gtaaaccac aacccatcagc 3360  
gtggcgtca tggctgtcac aaacatgtca cagtgcgtca gagatttgt ttatggccaa 3420  
atctggggct agtttatggc caggtttggg agcctgttcc cacatgtccc cctttttgt 3480  
tttgc当地 aataaaagca aaggcagctt tgc当地 agctacttct tgcaggagtc 3540  
gggattcgca tatgc当地 atacaaagac aaacaacaca gattaaaagc ccaaccatca 3600  
ttgaaatcac agagcttcca agtgc当地 tctatttta tgggtaatc actgctaatc 3660  
tgtctgc当地 tc当地aaggc actccagttc ctggcattaa ggtctgggtt gc当地tggaaatg 3720  
ctt当地atat ttgttctttt aatattgcaa tatggaaaga caagtttgc当地 gagtgc当地tcc 3780  
taggtgc当地 tt当地tctttt cctgaatttgc当地 gt当地tattta agagccatttta atagtttcca 3840  
caaatc当地tta tggtagctc ctacagc当地ggg cc当地atcatt tgagggtgag gtgc当地actat 3900  
accatcatgt ttccagataa taggaactct tgccatattt cttgc当地tattt ctaccatctg 3960  
accatttgt ttagaccagc taaacatagt gtggccatgg cacgc当地act gagaggtgca 4020  
attnaagcta aacatccc当地t taggggacca atcaataatg attccatagg aatcaactgca 4080  
cagcacctct gc当地tattctg caatgc当地atc ttcccaaaca agtgc当地tca tt当地tctgg 4140  
c当地aggtccaa ttctgtttac aaatagggtt ttgagggcaa tatgc当地tcaa tt当地agaaac 4200  
agatttattt tggtaatac tggatcaga aagcatgtgt aactgtgtca tagaatgatt 4260  
acatccaggc attattgcca gccaaggattt ataaatatgc ccaataagta taattgttct 4320  
ctgtgttagc cttgttgaa ggaatactaa tggcaatggt gatcactgct atcatagcta 4380  
tcattaaattt actcattgtg actgggtgtc ccactttctt cagggtttctt tccaccctct 4440  
atggcagttt ctgatctgt cccaggtagt atggctgtgt ttgatgggtt tgctcgtag 4500  
tagttgggt cctccctcagc atcagtc当地cg acatggctgc aaccagaggg tc当地tgggat 4560  
cctcccaagaa tctcttc当地ttt ggc当地tggc tcatgataag gttcagggtg tcttgc当地tgg 4620  
atccaaatca gctattgatt ctggc当地tgg gaaacacaag cataaccctct accccaaagtt 4680  
attattttac ctatccc当地t actttttgtt gtc当地agatctc tgc当地ccaagc cagttgttct 4740  
gcttctgttt ttgc当地agctgg tttctgtaga tgctcttc当地ag ctgctgatag catctggcct 4800  
ttaggcaggc tcaaaaaatt taaagtc当地t aatgctagat tcagttgtat atgggtgtcc 4860

tgtaatccct gtttccctt tttgcttttcaactgctgt ttcagggaga gattcattct 4920  
ttctacaatg gtttgcctt gagaattata tggatgcca gtaatgtgtt taatattcca 4980  
tatagagaaa aatgttagcta gagcttggct agtatacgct gggcattat ctgttttaac 5040  
agaagttgga attcctatca ccacaaaaca ctgcaaaagg tcatgctaa cacatgcagt 5100  
ctcctgattt gcatgttagcc cagacaaagt gagaaaaggt gtccacacat acatgtacat 5160  
aagctagtct cccaaacgag ggaacgtgtc acatccattt gctaaagata attaggttcc 5220  
aatcctcgag gattaactcc tccctgttaaa gatgaggaat gcaccatttgc acaagttggg 5280  
catcaactgga taatagcttt agcttcttc caggtactgt tatactgca tttgagacca 5340  
gaggcattaa catgggttaa attgtgaaag tgtctagcat tagatattgc agtagcaact 5400  
aggcgatcag ccatttgatt cccttcagtt aaaggtcctg gaagagggtgt atgagcccta 5460  
atgtgagtga tgtaaaaagg gtgcattcta ctccataatg ctgtttgcaa ttgggttaat 5520  
aaagtcatca gttgttcattc tttatgtttt cataactgag cattttcaat taattgtatg 5580  
gaatgaacca cataggaaga atcagaaatc acattaatag gcatatcaaa agcagtcaat 5640  
acctcaatta cagctaaagc tccactttt gagctgaagt atagggcgtg tgaaaaactt 5700  
taccttttga tccagaataa gaggcttac cattacaaga cccatctgtaaaaaacattct 5760  
cagcacccatc agttggtttta aatttagttt ttttggggag aatccaatta gttaattca 5820  
aaaattgaaa taatttcatt ttagggaaaat gattatcaag aataccacaa aagtcaagct 5880  
aatgggtttg ccaagtaaga ctatttataag aagcttgctg tatttgtgcc tttgtgagag 5940  
ggacaataat ttttccagga tcatatccat gtaatttaac aatccgaatt ctcccatatc 6000  
ttatcatcgt agccatttga tccaaataag gagtttagtctgtgaatta gtatgtggaa 6060  
gaaaaaagcca ctgtacaaag tcttgctttt atacaataac accagtaagt gaatgctgag 6120  
ttggaaaaat tagcaatctt agggctttt ttggatctat tctattttt tgagatttt 6180  
ggatttgctt tttgatttgc tgcagcttg cctcagcttc ttttggtaat tgctgaggc 6240  
taatgagact aggatctcct ctaaggatag aaaatagatt actcagggca taggtggaa 6300  
tgcctagagc aggtcatatc cgattatgt cccctagtaa ttttgaaag tcatttaatg 6360  
tttcaatttgc atccctacgt atagttactt tctgtggcac aatggtagtgc tcatttacta 6420  
aggtccccaa gtaggatgaa ggagtagtag tctgaattttt gtcaggagct atataattaa 6480  
actggcatga gaaatcgagt tttgcaagtg atcataacat tggagtaata tttcttgagt 6540  
ggggggcagca caaagtataat tatccatata atgaataatg taacactgtg aaaattttt 6600

acgagtaggt tcaattgctt gcccttcata agtctggcaa attttgaac tgtttcacat 6660  
gcctttagc aacactttcc aatacacaatg cttagatag ctgcagggtt tttactgcag 6720  
gaattgtaaa tgcaaacagt tcacagcctt gctcagctaa ggggatagta aagaaacagt 6780  
cttttaaatt tatgactatt aaaggccat ttttggaaat catagcagaa gaaggcagtc 6840  
ccggctgcaa tgtccccata ggttgtataa ctgaatataat ggctcttaag tcagttaca 6900  
ttctgcattt acctgatttt ttcttaattt caaaaactgg agaattccaa ggggaaaatg 6960  
ttgagctatg tgccctttt ctaattgttc agcaactaag tcctctaaag cctccagttt 7020  
ctcttactc agcagccatt gtgctatcca aattggctt tctgttaacc attttaagg 7080  
tatatagggtt ctggaggcatt aacaatggcc accatcaaaa atgatatcct aaaccttgg 7140  
gggaactttg tcttccgct tgaagcattt cttcaaaagc ttgcaaattt tttcttagtc 7200  
ccataccagg gacataccccc atttcatgca tcataatgtt acatttgaggg ctgtataatt 7260  
attctggaat tagaacttgt gatccccatt gttgtataaa atctcttccc tataaattta 7320  
taggtacaga agttataatt tttgtatag tcccaggttgc tccattgggc ctttcacaat 7380  
gcaaaatata actacttga tatactttaa gggcttacc aactccaact atgttaaatt 7440  
gagcaggttgc aattgaccat gcagatggcc agtgctgtac agaaatgatt gaaatgtccg 7500  
ctcctgtatc taccaaactt ttaaatttct ttccctgaat agttatttca ccagtaggat 7560  
gtttatcagt aatttgcattt acccaataag ctgcttgcc ttgtttattt gtgcttccaa 7620  
atcttcctgt tcatttaattt tcactttcc ccatttccac atatggcata atcaggagct 7680  
gtgctatatg ctctcctggc tctgctttcc agggaaacaga agtagatata acaatttga 7740  
tttccccctt gtaatctgaa tcaatgactc ctgtttgtac ttgcacgcct tttaaattta 7800  
aactagacct acctagaagt aatcctacca tccccgctgg catcatctga ctggagacag 7860  
caaccttctt taacagtccc attacaaaag gagaacctgt tccatatgga ttaatagctt 7920  
gtttaaatttcc tttgagtaat ttaaaaggaa aaggctcaaa tgttagctata atatttcct 7980  
gttgcatttac ggggtatattt ctaacacggga actgctaaagc ctctatatca ccctctttc 8040  
taacttgctg aattcctggc tgaatagaac tgagagtggt cgctcgaggt gctgctcagt 8100  
cactggggcg actactttt gcccagtgtc ctctggaaaa gaaagatctg gaggatcagg 8160  
ctactctttt gcttcgaaat aatgaggggg tgccagaagg tagggacaaa cctctccctc 8220  
cttgcact ttagcttag ctggcaaaca aacctgctct gtcacctttt ctgttacttc 8280

attatactt ccttcctcct catctttagt gtgaaaaggt tccaagggtgg aatgagctag 8340  
agcccacact tgcccatgtt taccctgatg cttccgagct ccccttctta ctcaccatgg 8400  
ggattgctta agagtactcg ggtatcctcc agctttgttc cacgtttcc aaccattgct 8460  
ccagcgagcc ttcatcctgg gtttgagtcc ccacgttggg cggccacttgc cgagaccagc 8520  
tcggtcgtgg agaccctaac ccagcagtgc tagaggaatt aaagacacac acacagaaac 8580  
atagagtgtg gagtggaaa tcaggggatt cacagccttc agagctgaga gccctgaaca 8640  
gagatttacc cacgtattta ttgacagcaa gccggtgata agcattattt ctgttagatta 8700  
tagattaact aaaagtattt cttacaggaa acaaagggtt gggccaaaac aaagcgatgg 8760  
gctctggcta gatatctgca gcaggaacac gtccttaagg cacagatcgc tcatgctatt 8820  
gttggct taggaatgcc ttaagtggtt ttccatctt ggtggaccag gtgttcctt 8880  
ccctcattcc agtaaaccctt caacccatcg tgtggcgtc atggccatca caaacatgtc 8940  
acagtgcgtc agagattttt tttatggcaa gatctggggc cagtttatgg ccagattga 9000  
gggcctgttc ccaacagtgg acaaagaaga aaagctgtt aaggcaaaca ggcacatatt 9060  
ttttaaagct acaatagcta gacaaactaa gagaatcctg tgtatgttt acttttgat 9120  
ttttatttt aatatttggc gatacatgt agatgtatattt atttatgggg cacttgagat 9180  
attttgatac aggcatacaa tggataataa taacatcagc gtaaaagggtt tatccattac 9240  
ctcaaggcatt tattttttt ttgtgttata aacaatccaa ttaaaccttt tatcataaaa 9300  
tgtacaataa ttttgactgt ggtcacccctg ttttgctatc aaagaataaa tcttattcat 9360  
tttatctaag tatatttggc taccctttaa ccatcccagt cccctgttc ctccaactac 9420  
acttcccagc ctctgttaac catcattcta ctctcttata tccatgagtt caattgttt 9480  
aatttggtagc tcccacaaat aagcgagaac atgggatgtt tgtctttctg tgccttattt 9540  
cacttaacat aatatcctcc agttccatcc atgttggttt atgacagaat ttcattttt 9600  
cttatggctg aatagtaccc cattgtatattt atataccaca ttttctttt ccattcatgt 9660  
gtaggtggac acttggattt ctcttagatc ttggctactg tgaatagtgc agcactaaac 9720  
atgggcgtgc agatatctcc ttgatattt gatttcctttt attttgggttataccttagc 9780  
agtgggattt ctggatttgc tggtagctt actgttagtc ttttggggaa cctccaaattt 9840  
gttctccata gtgggtgtac taatttacat tcccaaccaa caacagtgtt cagggttctg 9900  
ttttctccac atccttgcag catttttattt gcctgtttt tggataaaag ccatttttac 9960  
tgggggtgaaa tgatatctca ttgttagttt gattgcatt tctctgtatgc tcattgtatgt 10020

tgagcacctt ttatataatc tgtttgcatt tcatgtgcct tctttgaga aatgtctatt 10080  
tagatctttt gcccatttaa aaaattggat tattagattt ttttcctatt gagttatgg 10140  
atctccttat atattctggt tattaatccc ctttcaaattg gatagttgt gaatattttc 10200  
tcccattctg tgtattgcct ctgcacttg ttgattattt aatttgctat gcagaaaactt 10260  
ttaaacttga tgtgatccct tttgctcatt tttgcttgg ttgcctatgc ttgtgggta 10320  
tgacttaaga aatcttgc cagaccaatg tcattggagag ttttcttaat gttttctttt 10380  
aatagttca tagtttgatg tcttagattt aagtcttaa tctattttgt ttttattttt 10440  
gtatatggca agatataggg gtctagttc ttccgcataat ggatatctac ttttcccagt 10500  
accatttggtt gaagagactg tcctttctgc aatgtatgtt cttgacactt ttattgaaaa 10560  
tgaatttcaact gttagatgtgt ggatttggtt ctggggtctc tattctgttc tggtgttctg 10620  
tgtgtctgtt ttatgccag taccattctg ttttagttac tatagtctg tagtataatt 10680  
ttaagtcaaga taatgtgatt cctccagttt tgttctttt gctcagaata gctctggcta 10740  
ttctgggtct ttgtggggtt catgtaaatt ttaggattat attttattaa catatttctg 10800  
tgaagaatgt catgggtatt ttgataggaa ctgcattaaa tctatagatt gcttgggta 10860  
gtaaggatata tttaacaata ttgattttc caatccatga acatggaata tcttccatt 10920  
tttgggtgtc ctcttaatt tcttgcatca gtgttataag tgtttcttc atcagtgttt 10980  
atagtttca ttgttagagat cttttactcc tttgattaag tttattcctg ggtattttat 11040  
ttgttagctgt tgtagacgag attactatct tgatttctt ttcagattgt tcactgttgg 11100  
catatacaaaa tgctactgat ttttgatgt tgattttgt tactacaatt tcactgaatt 11160  
tgcttattac agagagacta aagatagttt ggtccattac caaatgtgtt ttctgtcaca 11220  
ttgaaaaattt ataccatgag aaggcacatg cttctagtaa ttacagttca tagatatgtc 11280  
aatgtacaga atgctgggtgt gacagttcac aattgtttgc tttatagttt tcactggaaa 11340  
ttaaattact aagggtaaag taatcccagc actgtgggaa gctgaggcag gatgattgct 11400  
taatgccagg agtttgagac cagctggggc aatgttagcat gagccccatct aaaaaaaaaaa 11460  
aaaggaatttca taattaaatat gtggtaactag aattaccaga aataataagg gaaacaactc 11520  
ggaaaagaag gtaagatgtg ttttgggtaa gaacagctat aaagtatgag gggatgtttt 11580  
gttttgttaa ggaaaaataa aaataatatt tgcctaaag tagaatgcct ggttgttaag 11640  
acaatgagaa agagaaagag tatagaagaa aaactgaatg gatataagaa agttgtagaa 11700

gggtgtggga taggaatcct ggaaaggaa ttttatatgt gatcaaacta agatttgaag 11760  
aaaattctaa gttttttttt aaaaaaattt agcatgaata tcaaaaacat actgacacag 11820  
aactagaaat ttgcctcta tggtaaaaca acaaggttt cttggagtat tggctgctc 11880  
ttaataagaa attgaaagac ttttcttac ctgctaagta attggcctag gaaatgaaga 11940  
ttctgtgttt tattgagata atttattgtg cttagtggat tctttattag atctttgact 12000  
gcctcagaga cctgagttca ccttattaaa agagaaagag tttctacaat tatgtggctt 12060  
tctttatttg ctttgaagt ctttaccaa tcactctagt taaatgaata aatattgttt 12120  
catagggacc tggatccta ttttaatcag atatttaaa ctttntgata tttttgactt 12180  
ctcaaaatca aattctaaat taaaacnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn 12240  
nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn 12300  
nnnnnnngcc ttcatctata agttttcct taccctttt gttggccccc tcagcccagc 12360  
ttttttttt tttaaaggac agggtctcac tctgttgct aggctggagt gcagcagcac 12420  
aattttggct cactgcagac tcaacctcca gggctcgagt aatcctccca cctcagcctc 12480  
ccaaatgtctt gggatcacaa gaatgtgcca ccacacccag ctaattcattt atttcttata 12540  
gagacagagt cttaactat tgccttaggt ggtctcaaattt ccttgggttc aagtgtatctt 12600  
cccacctcag cctctgagta gctaggacta caggcatgca ccaccatact cggctaattt 12660  
ttgttattttt actgttagaga catgggtct cacttggat ccttaggtgg tcttgaactc 12720  
ctgggctcga gtgattctcc tgccttgcc tcccaaagtg ctgggattac aggcttgagc 12780  
tatgtgccccca acctccttggat tttttttttt tttttttttt ttgtttttttt tttttttttt 12840  
aacatataaca tttataaaatc ctgattcaaa gactactttt gtgtgagggt attgagttt 12900  
cttttttttcc tccttcatc taggtcatgt ggcctttggg agatatgtgt gtgtgtgagg 12960  
ggtagggatgt gtgttaattt ttttaaattt atatttggat gctgtatgtt gtgaaagatt 13020  
tgctcatatggatc